Strategic Environmental Leadership

National Defense Industrial Association
Richmond, VA
April 9, 2003

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Outline

- Overall concepts
- Analysis of EMS drivers
- Current efforts highlighted
- Strategic View
- Industrial operations (manufacturing) view
- NDIA Environmental Innovations Committee
- Summary

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Environmental Program Evolution, Re-engineering The Industrial Revolution

Pollution Control → **Pollution Prevention** → **Industrial Ecology** → **Sustainable Development**

EMISSIONS (SINGLE MEDIA)

EMISSIONS (MULTI-MEDIA)
MATERIALS

EMISSIONS (MULTI-MEDIA)
ENERGY
MATERIALS

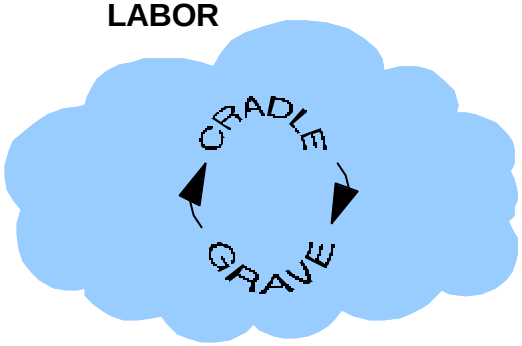
EMISSIONS(MULTI-MEDIA)
ENERGY
MATERIALS
CAPITOL
LABOR

END OF PIPE

DESIGN FOR ENVIRONMENT

GREEN ACCOUNTING

MATERIALS DATA BASE WITH LIFE CYCLE IMPACT



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Sustainable "Operations"

- The systematic consideration of *current* and *future* impacts of an activity, product, or decision on the environment, energy use, natural resources, economy, and quality of life.

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Strategic Planning

- What is the condition you would most like to change? (AS-IS)
  - Compliance and encroachment issues
  - Operational and readiness issues
  - Cost issues
- What would you want as the new state of this condition? (TO-BE)
  - Sustainable installation/range
  - Better and cheaper product or service
  - Integration of strategic environmental program goals with mission goals
- Needs Analysis- 5 year vision and plan

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EMS Drivers and Scope

- EO 13148 Requires Implementation of an EMS at "Appropriate **Facilities**" by 2005
- DoD EMS Policy Issued April 02
  - All **"missions, activities and functions"**
- ISO 14001 Section 4.2- Environmental Policy
  - All **"activities, products or services"**
- CEQ/OMB priority (Administration priority)
- OSD and Service EMS Policies and guidance
- EPA Performance Track
- Makes good business sense

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Military District Of Washington

- EMS at Multiple sites
- Gap analysis complete
- Broad mission
  - The U.S Army Band,
  - Third U.S. Infantry Regiment (The Old Guard),
  - Twelfth Aviation Battalion,
  - MDW Engineer Company,
  - Arlington National Cemetery, and the
  - Alternate Joint Communications Center

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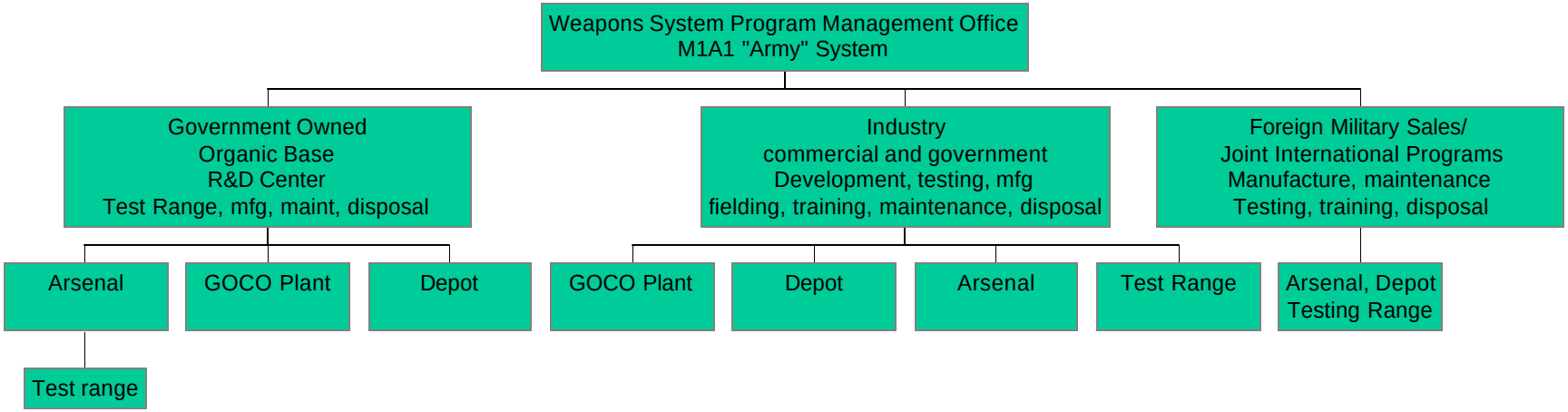
EMS Program Scope
(Notional)



Weapons System EMS

- Weapon Systems program offices have to perform life cycle environmental assessments (LCEA) and build them into their own and facility EMSs (for each facility impacted- R&D, manufacture, testing, training, maintenance, storage and disposal)
- Chemicals of concern have to be identified in LCEA and addressed in both environmental and mission-funded R&D programs (i.e. green ammo)
- Need to ensure that Scientists and Engineers in the weapons systems commodity centers are involved in EMS and not just the facility/environmental staffs
- Need a formalized technology transfer and lessons learned process
- Need to ensure that individual EMSs meet quality (i.e. content) standard and are not just a checklist item

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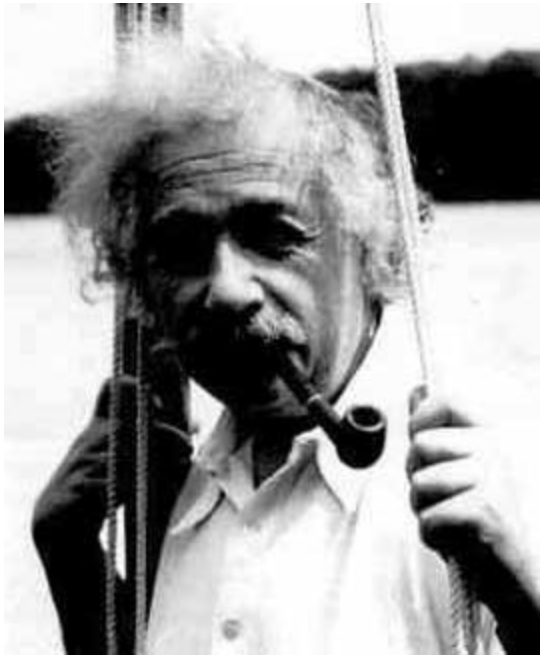
Albert Einstein

"We can't solve problems by using the same kind of thinking we used when we created them."



Strategic Environmental Leadership Tools

Inputs → **Process** → **Use of product** → **Disposal of product**

Examples

- Raw Materials
- Suppliers products

Examples

- Emissions
- Energy Use
- By products

Examples

- Emissions
- Energy Use
- Residual

Examples

- Hazardous materials
- Disposal Impacts

LCEA studies the environmental aspects and potential impacts throughout a product's life cycle

EMS provides management framework

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New Weapons Systems Acquisition Parameters

- Cost (Compliance, Energy, Permits and Liabilities)
  - Hazardous waste and environmental emissions can contribute between 10-30% of a weapons systems life cycle costs.
- Performance (Alternative technologies and materials)
- Schedule (Compliance and Permitting process)

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Full Spectrum of Environmental Costs

- Capital Costs
- Operation & Maintenance Costs
- Compliance Costs
- Liability Costs
- Image/ Qualitative Costs

Easier to Measure ⟷ **More Difficult to Measure**

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“The future of strategic environmental leadership is now”

EMS Implementation Strategy

- Three tiered process
  - Strategic- Headquarters Staff
    - Strategic Environmental Management Plan
      - Facilities and “mission organizations”
      - Includes defense contractors
  - Organizational- Regional Env Coord/States
    - Regional Plan- Addresses cross cutting issues
  - Tactical- Installations, “mission” organizations, tenants
    - Site-specific Facility or Organization Implementation Plan

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Army Test And Evaluation Command

- EMS at strategic, organizational and tactical levels
  - Headquarters
  - Major subordinate commands
  - Installations- White Sands, Dugway, etc.
- New “tenant” relationships at multiple locations
- Critical mission test function for weapons systems
- Customers include US and foreign military, and defense contractors
- Gap analysis completed and strategic workshop scheduled

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Weapons System Support

- Program Manager Close Combat Systems (formerly Mines, Countermines & Demolitions).
- Program related rather than facility specific:
  - Environmental impacts associated with contractor activities
  - EMS transportable to other programs
- Used Life Cycle Environmental Assessment (LCEA) as basis for analysis.
- Plans to 3rd party certify to ISO 14001
- Focused on Wide Area Munition (WAM).

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UXO/Munitions Constituents Implications

- Don't create it in the first place!
  - Green munitions- reduce hazardous material usage over weapons systems lifecycle
- Management tools
  - Manage hazardous materials with no approved substitute
  - Increase reliability of round
  - Self destruct fuse
  - Track firing with modeling and GIS tools
  - Enhanced detection- insert technology into munitions and/or fuses

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Manufacturing Example- Castings

- Weapons systems have many cast parts which may be part of larger assembly
- Significant casting is performed off shore due to cheaper labor and operating costs (i.e. environmental)
- Quality has suffered due to lower prices
- Casting Cost Factors
  - Equipment age and process changes
  - Environmental- US EPA maximum achievable control technology (MACT) standards
  - Energy
  - Labor- off shore (i.e. China)
- Candidate for EMS- Performance track

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Performance Track

- Designed to motivate and reward top environmental performance. Currently, the program has nearly 300 members. As part of membership in Performance Track, participants receive a range of incentives to motivate further improvements.
- **Benefits-**
  - Recognition and networking
  - Low priority for routine inspections
  - Streamlined reporting
    - *Up to 180 days to accumulate hazardous wastes*
    - *Reduce frequency of reports under MACT provisions of CAA*
    - *POTWs compliance procedures*
  - Joint incentives with states
- **Website**-http://www.epa.gov/performancetrack/index.htm

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NDIA Environmental Innovation Committee

- Newly formed in March 2003
- Will interact with OSD, Services and EPA Headquarters to support innovative programs like Performance Track and EPA Innovation Strategy
- Will cross all NDIA Divisions and local chapters
- Potential benefits- expedited cleanup, sustainability of operating ranges, and help avoiding risk in weapons system development
- Initial meeting with EPA HQS on 4/1/03
  - Industry sectors, performance track, DfE, Innovation strategy and small business office
- Chairman- Bob Scola, (703) 390-0668

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Summary

- No real change can occur until P2 and life cycle considerations of DOD weapons systems are taken.
- Using EMS and strategic planning can help get you there.
- NDIA Environmental Innovation Committee can help facilitate broad participation and technology transfer.
- ***Opportunities exist for innovation***.

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